## CLAIMS

What is claimed is:

1. An extensible-markup-language Path Language (XPath) evaluating method for evaluating the XPath relevant to an extensible-markup-language (XML) document by use of a computer, the XPath evaluating method comprising:

a first step of serially inputting XML event strings constituting an XML document to be processed;

a second step of serially evaluating the XPath respectively relevant to the inputted XML events and retaining information concerning a result of partial evaluation of the XPath in given storing means when the XPath is partially established woth respect to a given XML event; and

a third step of repeating the partial evaluation of the XPath along with the input of the XML event strings while considering the result of the partial evaluation retained in the storing means and evaluating that the XPath is established with respect to the XML document when the last part of the XPath is established.

2. The XPath evaluating method according to claim 1,

wherein the second step includes the steps of:

generating an automaton for expressing the XPath to be evaluated; and

evaluating the XPath partially by allowing transition of a state of the automaton based on inputted respective XML events and retaining a result of the partial evaluation as the state of the automaton.

3. The XPath evaluating method according to claim 1,

wherein the second step includes the steps of:

generating a first stack which expresses the XPath to be evaluated with a string of stack elements; and

generating a second stack for analyzing a nested structure of the XML document to be processed based on respective inputted XML events and then evaluating the XPath partially by comparing the first stack with the second stack.

4. The XPath evaluating method according to claim 1,

wherein the second step includes the steps of:

serially constructing a document tree indicating a document structure of the XML document to be processed based on input of respective XML events; and

evaluating the XPath along with construction of the document tree by use of the document tree including a part which has been constructed.

5. An XPath evaluating apparatus comprising:

an evaluation executing unit for inputting XML event strings constituting an XML document and serially evaluating the XPath with respect to each of XML events, while retaining information concerning a result of partial evaluation of the XPath when the XPath is partially established with respect to a given XML event, and evaluating that the XPath is established with respect to the XML document when the last step of the XPath is established; and

an XML event transferring unit for inputting the XML event strings constituting the XML document to be processed and serially transferring the XML event strings to the evaluation executing unit.

6. The XPath evaluating apparatus according to claim 5, further comprising:

an automaton generating unit for generating an automaton which expresses the XPath to be evaluated,

wherein the evaluation executing unit performs partial evaluation of the XPath by allowing a state of the automaton generated by the automaton generating unit to perform transition based on the XML events transferred from the XML event transferring unit, and retains a result of the partial

evaluation as the state of the automaton.

7. The XPath evaluating apparatus according to claim 5, further comprising:

a stack generating unit for generating a first stack which expresses the XPath to be evaluated with a string of stack elements,

wherein the evaluation executing unit performs partial evaluation of the XPath by generating a second stack for analyzing a nested structure of the XML document subject to processing based on the XML events transferred from the XML event transferring unit and then comparing the first stack generated by the stack generating unit with the second stack.

8. An XPath evaluating apparatus comprising:

a document tree constructing unit for inputting XML event strings which constitute an XML document and serially constructing a document tree indicating a document structure of the XML document based on inputted XML events along with the input of the respective XML events;

an XML event transferring unit for inputting the XML event strings which constitute the XML document to be processed and serially transferring the XML event strings to the document tree constructing unit; and

an evaluation executing unit for evaluating the XPath along with construction of the document tree by the document tree constructing unit, using the document tree with a part which has been constructed.

9. The XPath evaluating apparatus according to claim 8,

wherein the evaluation executing unit retains information concerning a result of partial evaluation of the XPath when the XPath is partially established upon the evaluation of the XPath using the document tree.

10. An information processing apparatus comprising:

an XML parser for analyzing an XML document to be processed and thereby generating XML event strings;

an XPath evaluating unit for serially inputting the XML event strings generated by the XML parser and evaluating the XPath with respect to each of inputted XML events by streaming processing; and

an application executing unit for inputting the XML events generated by the XML parser and performing processing with respect to the XML document configured by the XML events in response to an evaluation result of the XPath by the XPath evaluating unit,

wherein the XPath evaluating unit serially evaluates

the XPath with respect to each of the XML events, retains information concerning a result of partial evaluation of the XPath when the XPath is partially established with respect to a given XML event, and judges that the XPath is established with respect to the XML document when the last step of the XPath is established.

11. The information processing apparatus according to claim 10,

wherein the XPath evaluating unit generates an automaton for expressing the XPath to be evaluated,

performs partial evaluation of the XPath by allowing transition of a state of the automaton based on the XML events generated by the XML parser, and retains a result of the partial evaluation as the state of the automaton.

12. The information processing apparatus according to claim 10,

wherein the XPath evaluating unit generates a first stack which expresses the XPath to be evaluated with a string of stack elements, generates a second stack for analyzing a nested structure of the XML document to be processed based on the XML events generated by the XML parser, and performs partial evaluation of the XPath by then comparing the first

stack with the second stack.

13. The information processing apparatus according to claim 10,

wherein the XPath evaluating unit serially constructs a document tree indicating a document structure of the XML document to be processed based on inputted XML events along with the input of the respective XML events generated by the XML parser, and evaluates the XPath by use of the document tree with a part which has been constructed.

14. A program for controlling a computer to evaluate the XPath with respect to an XML document, the program causing the computer to execute the procedures for carrying out the steps of claim 1.

15. An article of manufacture comprising a computer usable medium having computer readable program code means embodied therein for causing evaluation of the XPath relevant to an extensible-markup-language (XML) document, the computer readable program code means in said article of manufacture comprising computer readable program code means for causing a computer to effect the steps of claim 1.

16. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for evaluating the XPath relevant to an extensible-markup-language (XML) document, said method steps comprising the steps of claim 1.

17. A computer-readable recording medium comprising the program according to claim 14.

18. A computer program product comprising a computer usable medium having computer readable program code means embodied therein for causing XPath evaluation, the computer readable program code means in said computer program product comprising computer readable program code means for causing a computer to effect the functions of claim 5.

19. A computer program product comprising a computer usable medium having computer readable program code means embodied therein for causing XPath evaluation, the computer readable program code means in said computer program product comprising computer readable program code means for causing a computer to effect the functions of claim 8.

20. A computer program product comprising a computer usable

medium having computer readable program code means embodied therein for causing information processing, the computer readable program code means in said computer program product comprising computer readable program code means for causing a computer to effect the functions of claim 10.